

Quiz #2 (CSE4190.667)

April 13, 2015 (Monday)

Name: _____ Dept: _____ ID No: _____

1. (10 points) Construct a translational surface $\mathbf{x}(u, v)$, $0 \leq u, v \leq 1$, that interpolates two boundary curves $S(u, 1)$ and $S(1, v)$ of the bivariate surface $S(u, v) = \begin{bmatrix} u \\ v \\ u^2v^2 \end{bmatrix}$, for $0 \leq u, v \leq 1$.

2. (15 points) What are the control points \mathbf{b}_{ij} , ($i, j = 0, 1, 2, 3$), for a bicubic Bézier

patch $\mathbf{x}(u, v) = \begin{bmatrix} u + 2 \\ (v + 3)^2 \\ (u + 2)(v + 3) \end{bmatrix}$ over the rectangular domain $0 \leq u, v \leq 1$?